



4 Courses

**Divide and Conquer, Sorting
and Searching, and
Randomized Algorithms**

**Graph Search, Shortest
Paths, and Data Structures**

**Greedy Algorithms,
Minimum Spanning Trees,
and Dynamic Programming**

**Shortest Paths Revisited,
NP-Complete Problems and
What To Do About Them**

Stanford
ONLINE

Dec 12, 2023

الحسن ابراهيم جادالرب عبدالراضي

has successfully completed the online, non-credit Specialization

Algorithms

In this specialization, learners developed a fundamental understanding algorithms and data structures. Learners studied general algorithm design paradigms and their applications, including divide-and-conquer, greedy methods, and dynamic programming; how to use data structures; and how to recognize and tackle NP-hard problems. Learners completed quizzes and programming assignments, and took an exam for each course. Some online courses may draw on material from courses taught on-campus but they are not equivalent to on-campus courses. This statement does not affirm that this participant was enrolled as a student at Stanford university in any way. It does not confer a Stanford university grade, course credit or degree, and it does not verify the identity of the participant.

Tim Roughgarden
Associate Professor of
Computer Science
Stanford University

The online specialization named in this certificate may draw on material from courses taught on-campus, but the included courses are not equivalent to on-campus courses. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner.

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